

REMARKS

The claims have been amended to overcome the Examiner's objections under 35 U.S.C. 112, second paragraph.

In particular, the expression "*optionally*," which was formerly used in claim 1, has been deleted. Claim 1 has further been amended to harmonize the terminology used in the claim and to include proper antecedent basis for subsequently recited features.

It shall now be appreciated that the sheet-processing machine of amended claim 1 comprises a plurality of modules including a sheet feeder module and a plurality of downstream sheet-processing modules selected from the group of sheet-processing modules comprising an inspection module, a marking module and a numbering module, which modules are designed in such a way that at least three specific machine assemblies can be formed out of the listed modules.

Claim 2 has been amended to recite that "*transfer of a sheet from an upstream module to a downstream module is effected by means of an output transport cylinder located at a sheet output interface of the upstream module which transfers the sheet to an input transport cylinder located at a sheet input interface of the downstream module.*" The expression "*upstream module*" designates any of the claimed modules that are located upstream of another module, such as the sheet feeder module or inspection module. The expression "*downstream module*" designates any of the claimed modules that are located downstream of another module, such as the inspection module, the numbering module or the marking module.

Claim 3 has been amended to depend upon claim 1 and to specifically relate to the inspection module, which comprises "*an even number of transport cylinders for transporting the*

sheets from a sheet input interface to a sheet output interface of the inspection module” as illustrated in Figures 2 to 7 of the present application.

Some minor editorial amendments have been made to claim 4.

Claim 5 has been amended to specifically recite that the sheet feeder module, inspection module, marking module and numbering module each have their own respective side frame panels.

Claim 6 has been amended to depend upon claim 5 and to specifically recite that the sheet feeder module, inspection module, marking module and numbering module each have at least one transport cylinder that is fixed to the side frame panels. This amendment takes into account the specific objection that was raised by the Examiner in connection with the use of the expression “*the transport cylinder*” that had insufficient antecedent basis in claim 6.

Claim 7 has been amended to replace the expression “*individual modules*” by an explicit reference to the sheet feeder module, inspection module, marking module and numbering module.

Claim 8 has been amended to properly recite that “*modules*” are being referred to in the claim. More precisely, amended claim 8 now recites that “*the marking module and the numbering module have a cut-out for engagement and support of the side frame panels of the sheet feeder module or of the inspection module.*”

Claim 9 has been amended to properly define which “*modules*” are being referred to in the claim, namely the sheet feeder module and the inspection module as illustrated in Figures 2 to 7 of the present application.

Claim 10 has been amended to specifically refer to the second machine assembly defined in claim 1 and to harmonize the terminology used in the claim in relation to the “*sheet conveying direction*,” which is now defined in claim 1.

Claims 11, 14 and 15 have been amended to specifically define the marking device as being a device “*for applying a marking to the sheets*” as already defined in claim 16. Claims 12 and 13 have been amended to be dependent upon amended claim 11 and to specifically refer to the numbering module. Claims 14 and 15 have further been amended to refer to “*a fault detected by said inspection module*.”

Claims 16, 17 and 19 remain unchanged.

Claim 18 has been amended to overcome the Examiners’ objection in connection with the limitation “*the direction*” that had insufficient antecedent basis. Amended claim 18 now recites that the plurality of print heads are distributed uniformly “*transversely to the sheet conveying direction*.”

Claim 20 has been amended to include the explicit limitation that the additional transport module is interposed between the sheet feeder module and the inspection module to form an additional machine assembly as illustrated in Figure 6 of the present application.

Claim 21 has been amended to include the explicit limitation that the additional expansion module is interposed between the inspection module and the marking module to form an additional machine assembly as illustrated in Figure 7 of the present application.

Claim 22 has been amended to include specific limitations directed to the embodiments illustrated in Figures 1, 3 and 5 of the instant application where an inking unit module is provided, which in conjunction with the marking module or the numbering module forms a

printing module. This has led to corresponding amendments in dependent claim 23, as well as in dependent claims 25, 26, 27 and 29.

Claim 24 has been cancelled without prejudice.

Claim 25 has been amended to include further limitations directed to the embodiments illustrated in Figures 1, 3 and 5 of the present application where a form cylinder is provided in the marking module or numbering module for cooperation with the inking unit module to form the printing module.

Claim 26 has been amended to depend upon amended claim 25 and to include additional limitations specifically directed to the embodiments illustrated in Figures 1 and 3 of the present application where the inking unit module is installed on the numbering module to form the printing module and wherein this printing module uses a transport cylinder of the sheet-feeder module or of the inspection module upstream of the numbering module as counter-pressure cylinder for the form cylinder.

Claim 27 has been amended to properly recite which “*module*” is being referred to in the claim, namely the marking or numbering module and with a view to ensure proper terminology consistency regarding the expression “*inking unit module*.”

Claim 28 has been amended to specifically refer to the “*input and output transport cylinders*” defined in claim 2.

Claim 29 has been amended to dependent upon amended claim 26 and to specifically refer to the “*output transport cylinder acting as counter-pressure cylinder*,” which is defined in claim 26.

Claim 30 has been amended to specifically recite that “*an output transport cylinder at the sheet output interface of the inspection module and an output transport cylinder at the sheet output interface of the sheet feeder module are located at a same height.*”

Claim 31 has been amended to recite that the inspection module comprises two transport cylinders “*for transporting the sheets for inspection of front and rear sides of the sheets by inspection devices.*”

Minor editorial amendments have been carried out in claims 32 and 33.

Claim 34 remains unchanged.

Claim 35 has been amended to recite that “*the inspection module comprises a third transport cylinder and an additional inspection device for inspecting light-transmitting capacity of the sheets.*” Corresponding editorial amendments have been carried out in claim 36 to ensure proper terminology consistency.

Claims 37 and 38 remain unchanged.

Claim 39 has been cancelled without prejudice.

New claims 40 to 54 have been added.

New claims 40 to 42 respectively recite the same additional features as presently defined in dependent claims 17 to 19 with the only difference being that new dependent claims 40 to 42 each depend upon claim 16.

New claim 43, which depends upon claim 1, recites that “*a configuration of a sheet input interface of the numbering module is identical to a configuration of a sheet input interface of the marking module so that any one of said numbering module and marking module can be coupled directly to a sheet output interface of the inspection module.*” These features are readily apparent from the illustrations of Figures 2 to 6 of the application.

New claim 44 recites the same additional features as formerly defined in dependent claim 22 with the only difference being that new dependent claim 44 depends on claim 20, which refers to the additional provision of the transport module between the sheet-feeder module and the inspection module. Claim 44 specifically relates to the embodiment illustrated in Figure 6 of the present application where the inking unit module is installed on the transport module downstream of the sheet feeder module to form the printing module.

New claims 45 to 49 respectively recite basically the same additional features as defined in amended claims 23, 25 to 27 and 29 with the difference being that these claims dependent directly or indirectly upon new claim 44 and relate specifically to the embodiment illustrated in Figure 6 of the present application where the inking unit module is installed on the transport module.

New claim 50 recites the same additional features as formerly defined in dependent claim 9 with the only difference being that new dependent claim 50 depends on claim 20 which refers to the additional provision of the transport module between the sheet feeder module and the inspection module. Claim 50 also specifically relates to the embodiment illustrated in Figure 6 of the present application.

New claim 51 recites the same additional features as formerly defined in dependent claim 9 with the only difference being that new dependent claim 51 depends on claim 21 which refers to the additional provision of the expansion module between the inspection module and the marking module. Claim 51 specifically relates to the embodiment illustrated in Figure 7 of the present application.

New claim 52, which depends upon amended claim 25, recites the same additional features as formerly defined in dependent claim 26 with the difference being that claim 52

includes additional limitations specifically directed to the embodiment illustrated in Figure 5 of the present application where the inking unit module is installed on the marking module to form the printing module and wherein this printing module uses a transport cylinder of the inspection module upstream of the numbering module as counter-pressure cylinder for the form cylinder.

New claim 53 recites the same additional features as presently defined in amended claim 29 or new claim 49 with the only difference being that claim 53 depends upon new claim 52 (see also Figure 5).

New independent claim 54 is specifically directed to the machine assemblies illustrated in Figure 2 to 7 of the present application wherein the sheet feeder module feeds the sheets to one or more downstream sheet-processing modules, including at least the inspection module for monitoring the print quality of the sheets, wherein the inspection module comprises two transport cylinders for transporting the sheets for inspection of front and rear sides of the sheets by inspection devices, wherein the inspection module comprises a third transport cylinder having a transparent casing and an additional inspection device for inspecting light-transmitting capacity of the sheets, and wherein the additional inspection device comprises an image sensor and a light source for inspection by transmission, the light source being arranged within the transparent casing of the third transport cylinder.

New claim 54 has been drafted in consideration of the Examiner's statement that the subject-matter of claim 36 would appear to include allowable subject-matter.

Claim rejections under 35 U.S.C. § 102 and § 103

Former claims 1-32, 35 and 37 to 39 were rejected under 35 U.S.C. 102(b) as being anticipated by Canadian Publication No. 2 407 810, which derives from International Application No. WO 01/85457 A1 in the name of the present Applicant.

Former claim 33 was rejected under 35 U.S.C. 103(a) as being unpatentable over Canadian Publication No. 2 407 810, and further in view of US Patent No. 6,166,366 (“Lewis et al.”).

Former claim 34 was rejected under 35 U.S.C. 103(a) as being unpatentable over Canadian Publication No. 2 407 810, and further in view of US Patent No. 4,299,325 (“Quinton et al.”).

Former claim 36 was held to include allowable subject-matter, with the Examiner awaiting however to see how the rejections under 35 U.S.C. 112, second paragraph, would be addressed.

Canadian Publication No. 2 407 810

The Examiner’s assessment of Canadian Publication No. 2 407 810 is correct insofar as it discloses a sheet-processing machine for processing sheets each comprising a plurality of copies, which sheet-processing machine exhibit a machine configuration with a sheet feeder (1, 2, 3), an inspection unit (4-10) for monitoring the print quality of the sheets and a numbering unit (11-14) for applying serial numbering to the sheets connected in succession with respect to the sheet conveying direction.

Canadian Publication No. 2 407 810 also discloses a marking device (19) located along the path of the sheets that are being carried by a chain transfer device (18) to delivery stacks (21-

23). This marking device (19) applies a mark to the upper part of the sheets that have been found to be defective (see page 10, lines 2-9).

The numbering unit (11-14) may also use so-called “smart” electronic numbering devices that can print a special cancellation mark on individual elements of the sheets that are considered as being unacceptable from the point of view of print quality (see page 9, lines 17-32).

The configuration of the sheet-processing machine of Canadian Publication No. 2 407 810 may be assimilated to the second machine assembly defined in claim 1.

This being said, Canadian Publication No. 2 407 810 does not disclose that the sheet feeder (1, 2, 3), the inspection unit (4-10) and the numbering unit (11-14) are designed as modules, nor that any of the other two machine assemblies defined in claim 1 can be formed. As a matter of fact, Canadian Publication No. 2 407 810 is silent about any marking module, as claimed, that can be combined with other modules to form the third machine assembly defined in claim 1. There is furthermore no indication or suggestion in Canadian Publication No. 2 407 810 regarding the first machine assembly defined in claim 1.

Lewis et al. (US Patent No. 6,166,366)

Lewis et al. is only cited in connection with the subject-matter of dependent claim 33 regarding the provision of inspection devices comprising a UV light source and a light sensor for detecting fluorescence produced by the UV light source.

The Examiner’s assessment of Lewis et al. is correct insofar as reference is made in Lewis et al. to the provision of inspection devices for inspecting printed images, which inspection devices may comprise a UV light source and a light sensor for detecting fluorescence produced by the UV light source (see column 14, line 55, to column 15, line 10).

Lewis et al. is therefore not relevant for any of the other claimed subject-matter. More particularly, Lewis et al. does not affect the patentability of independent claims 1 and 54.

Quinton et al. (US Patent No. 4,299,325)

Quinton et al. is only cited in connection with the subject-matter of dependent claim 34 regarding the provision of inspection devices comprising a magnetic field sensor.

The Examiner's assessment of Quinton et al. is correct insofar as reference is made in Quinton et al. to the provision of a magnetic field sensor for identifying magnetic stickers applied on rejected documents (see column 2, lines 31-36).

Quinton et al. is therefore not relevant for any of the other claimed subject-matter. More particularly, Quinton et al. does not affect the patentability of independent claims 1 and 54.

Conclusions

It is submitted that the subject-matter of amended claim 1 is not anticipated by and is moreover patentable over Canadian Publication No. 2 407 810. Indeed, claim 1 as amended specifically provides that a number of different modules are provided, namely a sheet feeder module, an inspection module, a marking module and a numbering module, and that these modules are combined together to form at least three specific machine assemblies.

The same applies to the subject-matter of new claim 54, which has been drafted with consideration of the Examiner's statement that the subject-matter of claim 36 would appear to include allowable subject-matter. Indeed, new claim 54 is specifically directed to the embodiments illustrated in Figures 2 to 7 of the present application wherein the inspection module comprises three transport cylinders and associated inspection devices, and wherein one

of the three transport cylinder (the “*third cylinder*” in claim 54) has a transparent casing and the associated inspection device (the “*additional inspection device*” in claim 54) is designed to inspect light-transmitting capacity of the sheets and comprises an image sensor, and a light source for inspection by transmission, which light source is arranged within the transparent casing of the transport cylinder.

For all these foregoing reasons, Applicant respectfully requests entry of the foregoing amendments to the claims, reconsideration of the present application in light thereof, and in light of the foregoing remarks, and allowance of all claims, as amended, over all the prior art of record.

Respectfully submitted,

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